Buildings and Infrastructure

As part of the capital budget process, each agency must submit a list of all buildings and infrastructure. This inventory list is then applied to industry formulas that calculate how much should be spent to maintain the state's building and infrastructure assets. The remainder of this section provides information on the building repair formula and the infrastructure repair formula.

These formulas should be used as a guide by state agencies in their budget requests and will be used by the Office of Management and Budget as it formulates the executive recommendation.

In January, the current inventory of buildings and infrastructure is sent to each agency along with instructions on updating the inventory lists.

Note: The formulas outlined below are based on annual needs and must be doubled to meet North Dakota's biennial budget period.

Extraordinary Repairs - Buildings
Formulas are generally used to calculate the cost of adequately maintaining buildings. The formula selected for use in North Dakota is generally applicable, simple to apply, easy to understand, self-adjusting, and reliable.

The formula is based on the following premises:

1. The formula reflects current building valuation.
2. The formula recognizes that as a general policy, fewer resources should be directed to building renewal than the cost of building replacement.
3. The formula recognizes that older buildings require proportionally more repair funds than do newer buildings.
4. The formula is applied to an entire facility system in an actuarial manner, generating a pool of funds to be used on extraordinary repairs.

Building Formula
The annual extraordinary repairs formula for buildings is as follows (Building Replacement Value = BRV):

Buildings 5 years old or older at mid-year of biennium
(BRV) x 2% = Formula Amount

Buildings less than 5 years old = 0

Building Replacement Value
The North Dakota Century Code requires that state buildings built after 1939 are insured at replacement value. Agencies should utilize the building's insured value as the building value factor (BRV). All state-owned buildings are insured through the Fire and Tornado Fund.

Any difference between the insured value and the building value used in the formula must be documented by the agency and approved in writing by the Office of Management and Budget prior to final submission of the capital budget inventory.

Building Age Factor
The building age is determined by subtracting the year a building was built or extensively renovated from 2010, the mid-year in the 2009-11 biennium. If a building was built or renovated in 1953, the building age factor is 57 (2010 minus 1953).

Extraordinary Repairs - Infrastructure
Infrastructure is defined as a structure outside of and apart from a building, but necessary to the functioning of the building. Examples of infrastructure include water and sewer lines, electrical lines, parking lots, sidewalks and roads.

Recognizing that formulas based on building value would not provide adequate funding for infrastructure needs, the following formula is used in calculating costs of extraordinary repairs to infrastructure.

Infrastructure Formula
The annual extraordinary repairs formula for infrastructure is as follows:

P x R = *Formula Amount.*
P = Infrastructure renewal percentage.
R = Infrastructure replacement value (per unit value times the number of units).

Infrastructure Renewal Percentage
The infrastructure renewal percentage is the straight-line depreciation over the normal life of the item. For example, the infrastructure renewal percentage for an item with a 20-year normal life is five percent.

Infrastructure Replacement Value
Infrastructure will be valued at replacement cost. Expertise from the North Dakota Association of Physical Plant Administrators was used to determine unit replacement costs and parameters applicable to the valuation of the following types of infrastructure:

Code	Description	Rate	Unit	Life
Parking Lot				
1001	Parking Lot: 3" Asphalt Concrete	2.00	sq ft	20
1002	Parking Lot: 4" Asphalt Concrete	3.18	sq ft	25
1003	Parking Lot: 5" Asphalt Concrete	3.83	sq ft	25
1004	Parking Lot: 6" Asphalt Concrete	4.71	sq ft	30
1005	Parking Lot: 8" Asphalt Concrete	4.86	sq ft	35
1006	Parking Lot: 10" Asphalt Concrete	5.54	sq ft	35
1009	Parking Lot: 4" Reinforced Concrete	4.00	sq ft	35
1010	Parking Lot: 6" Concrete	5.11	sq ft	30
1011	Parking Lot: 7" Concrete	5.44	sq ft	30
1012	Parking Lot: 8" Concrete	5.76	sq ft	35
1015	Parking Lot: 6" Reinforced Concrete	2.60	sq ft	35
1020	Parking Lot: Curb and Gutter	17.00	lf	30
1030	Parking Lot: Catch Basins - Casting Only	945.00	ea	30
1031	Parking Lot: Catch Basins - With Manhole	7,000.00	ea	30
1040	Parking Lot: Gravel 6"	0.40	sq ft	20
1041	Parking Lot: Gravel 8"	3.35	sq ft	20
1042	Parking Lot: Gravel 12"	0.80	sq ft	20
Storm Sewer				
1101	Storm Sewer: 6" Poly Vinyl Chloride	83.00	ft	60
1103	Storm Sewer: 8" Poly Vinyl Chloride	97.00	ft	60
1104	Storm Sewer: 10" Poly Vinyl Chloride	110.00	ft	60
1105	Storm Sewer: 12" Poly Vinyl Chloride	70.50	ft	60
1106	Storm Sewer: 15" Poly Vinyl Chloride	28.00	ft	60
1107	Storm Sewer: 21" Poly Vinyl Chloride	34.00	ft	60
1108	Storm Sewer: 24" Poly Vinyl Chloride	45.00	ft	60
1109	Storm Sewer: 30" Poly Vinyl Chloride	65.00	ft	60
1110	Storm Sewer: 12" Reinforced Concrete Pipe	108.00	ft	60
1111	Storm Sewer: 18" Reinforced Concrete Pipe	140.00	ft	60
1112	Storm Sewer: 24" Reinforced Concrete Pipe	230.00	ft	60
1113	Storm Sewer: 36" Reinforced Concrete Pipe	186.00	ft	60
1114	Storm Sewer: 48" Reinforced Concrete Pipe	253.00	ft	60
1115	Storm Sewer: 60" Reinforced Concrete Pipe	297.00	ft	60
1116	Storm Sewer: 15" Reinforced Concrete Pipe	123.00	ft	60
1117	Storm Sewer: 21" Reinforced Concrete Pipe	172.00	ft	60
1119	Storm Sewer: 30" Reinforced Concrete Pipe (uncased bore)	327.25	ft	60
1120	Storm Sewer: (metal culvert)	12.76	ft	60
1125	Storm Sewer: 6" Area Drain	9.38	ft	60
Water Main				
1201	Water Main: 2" Copper	26.34	ft	50
1202	Water Main: 3/4" Poly Vinyl Chloride	63.00	ft	35
1203	Water Main: 1" Poly Vinyl Chloride	63.00	ft	35

Code	Description	Rate	Unit	Life
1204	Water Main: 1-1/4" - 1-1/2" Poly Vinyl Chloride	63.00	ft	35
1205	Water Main: 2" Poly Vinyl Chloride	63.00	ft	35
1206	Water Main: 3" Poly Vinyl Chloride	58.00	ft	35
1210	Water Main: 4" Poly Vinyl Chloride	58.00	ft	35
1211	Water Main: 6" Poly Vinyl Chloride	75.37	ft	35
1212	Water Main: 8" Poly Vinyl Chloride	77.55	ft	35
1213	Water Main: 10" Poly Vinyl Chloride	79.00	ft	35
1214	Water Main: 12" Poly Vinyl Chloride	88.00	ft	35
1215	Water Main: 16" Poly Vinyl Chloride	110.00	ft	35
1220	Water Main: Underground Chilled - 6"	100.00	lf	35
1221	Water Main: Underground Chilled - 8"	110.00	lf	35
Sanitary Sewer				
1290	Sanitary Sewer: 4" Poly Vinyl Chloride	120.00	ft	40
1300	Sanitary Sewer: 5" Poly Vinyl Chloride	120.00	ft	40
1301	Sanitary Sewer: 6" Poly Vinyl Chloride	120.00	ft	40
1302	Sanitary Sewer: 8" Poly Vinyl Chloride	133.92	ft	40
1303	Sanitary Sewer: 10" Poly Vinyl Chloride	150.12	ft	40
1304	Sanitary Sewer: 12" Poly Vinyl Chloride	156.00	ft	40
1305	Sanitary Sewer: 14" Poly Vinyl Chloride	179.28	ft	40
1306	Sanitary Sewer: 16" Poly Vinyl Chloride	197.00	ft	40
1307	Sanitary Sewer: 18" Poly Vinyl Chloride	209.00	ft	40
1308	Sanitary Sewer: 15" Poly Vinyl Chloride	186.00	ft	40
Electrical				
1401	Electrical: Conduit	77.90	ft	25
1402	Electrical: Direct Buried	65.28	ft	20
1405	Electrical: Overhead	11.36	ft	25
Steamline				
1501	Steamline; Direct Burial: 2"	183.24	ft	25
1502	Steamline; Direct Burial: 3"	196.24	ft	25
1503	Steamline; Direct Burial: 4"	223.24	ft	25
1504	Steamline; Direct Burial: 6"	301.24	ft	25
1505	Steamline; Direct Burial: 8"	354.24	ft	25
1506	Steamline; Direct Burial: 10"	406.24	ft	25
1510	Steamline: Direct Burial: 5"	212.24	ft	25
1520	Steamline; Direct Burial 1-1/2"	174.24	ft	25
1522	Steamline; Direct Burial 2-1/2"	250.00	ft	25
1524	Steamline: Direct Burial 12"	459.24	ft	25
1526	Steamline: Direct Burial 14"	511.24	ft	25
1528	Steamline: Direct Burial 16"	560.00	ft	25
1529	Steamline: Direct Burial 18"	594.00	ft	25
Condensate				
1600	Condensate, Direct Burial: 1"	139.00	ft	10
1601	Condensate, Direct Burial: 2" and 2-1/2"	147.00	ft	10
1602	Condensate, Direct Burial: 3"	160.00	ft	10

Code	Description	Rate	Unit	Life
1603	Condensate, Direct Burial: 6" (includes vault)	263.00	ft	10
1604	Condensate, Direct Burial: 4"	187.00	ft	10
1611	Condensate, Direct Burial: 8"	310.00	ft	10
Utility Tunnels				
1701	Utility Tunnels, W/O Steamlines: 4' X 4'	245.00	ft	60
1702	Utility Tunnels, W/O Steamlines: 4' X 6'	305.00	ft	60
1703	Utility Tunnels, W/O Steamlines: 5' X 7'	397.00	ft	60
1801	Utility Tunnels, with Steam & Condensate Lines: 4' X 4'	523.00	ft	40
1802	Utility Tunnels, with Steam & Condensate Lines: 4' X 6'	582.00	ft	40
1803	Utility Tunnels, with Steam & Condensate Lines: 5' X 7'	675.00	ft	40
1805	Utility Tunnels, with Steam & Condensate Lines: 7' X 7'	900.00	fr	40
1806	Utility Tunnels, with Steam & Condensate Lines: 8' X 7'	925.00	ft	40
Gas Mains				
1901	Gas Mains: 2" HP Poly Vinyl Chloride	32.40	ft	35
1902	Gas Mains: 3" HP Poly Vinyl Chloride	35.00	ft	35
1910	Gas Mains: 4" Steel	40.00	ft	35
Telecom				
2000	Telecom: Telephone Line	32,000.00	ea	25
2001	Telcom: Main Conduit Ductbank - Fiber Optic - 96&144 Strand	30.42	ft	25
2002	Telcom: Main Conduit Ductbank - Copper, 1800 pair	61.24	ft	25
2010	Telcom: Conduit Ductbank: Trunk Line - Copper, 600 pair & fiber	72.24	ft	25
2011	Telcom: Conduit Ductbank: Trunk Line - Copper, 300 pair & fiber	68.01	ft	25
2020	Telcom: Conduit Ductbank: Trunk Line - Copper, 12-100 pair	20.75	ft	25
2030	Telcom: Aerial Cable Plant - Copper	5.00	ft	25
2040	Telcom: Broadband Coax Cable - .825 Coax (Back bone)	6.09	ft	25
2041	Telcom: Broadband Coax Cable - .625 Coax (Back bone to bldg)	4.76	ft	25
2050	System 7	10.00	ft	25
2055	Deltanet	14.16	ft	25
Sidewalk				
2070	Sidewalk: 3" Asphalt	2.84	sq ft	20
2100	Sidewalk: 4" Reinforced Concrete - 6' wide	10.00	sq ft	20
2101	Sidewalk: 4" Reinforced Concrete	2.64	sq ft	25
2102	Sidewalk: 5" Reinforced Concrete	2.65	sq ft	30
2103	Sidewalk: 6" Reinforced Concrete	4.70	sq ft	30
2110	Sidewalk: Patio Brick	5.00	sq ft	25
2111	Sidewalk: Patio Brick with 3" Concrete Base	10.10	sq ft	30
2113	Sidewalk: Stone Walkway	5.50	sq ft	40
2125	Boardwalk	18.50	ft	5
Lighting				
2201	Lighting: 30' Pole	4,863.64	pole	35

Code	Description	Rate	Unit	Life
2202	Lighting: 75' Pole	9,550.00	pole	35
2203	Lighting: 100' Pole	31,000.00	pole	20
2204	Lighting: Walkway 15'	2,100.00	ea	35
2206	Lighting 20' Pole	3,000.00	ea	35
2210	Lighting: 12' Pole	1,375.00	ea	35
2211	Lighting: On Building	800.00	ea	35
2213	Lighting: Hi-Mast 40'	19,550.00	ea	35
Razor Wire				
2301	Razor Wire: 32"	5.50	ft	15
Streets & Roads				
2350	Streets & Roads: 16' Wide (no curbs) & 6" Gravel Base - Auto 6" A.C.	109.70	ft	20
2355	Streets & Roads: 20' Wide (no curbs) & 6" Gravel Base - Auto 6" A.C.	124.00	ft	20
2360	Streets & Roads: 26' Wide (no curbs) & 6" Gravel Base - Auto 6" A.C.	145.40	ft	20
2365	Streets & Roads: 16' Wide (curb one-side) & 6" Gravel Base - Auto 6" A.C.	116.20	ft	20
2370	Streets & Roads: 24' Wide (w/ curbs) & 6" Gravel Base - Auto 6" A.C.	139.00	ft	20
2401	Streets & Roads: 26' Wide (w/ 4 Curbs) & 6" Gravel Base - Auto 8" Concrete	169.00	ft	25
2402	Streets & Roads: 26' Wide (w/ 4 Curbs) & 6" Gravel Base - Truck 12" Concrete	267.00	ft	25
2408	Streets & Roads: 30' wide (no curbs)+6" Gravel Base - Auto 8" Concrete	156.00	ft	25
2410	Streets & Roads: 30' Wide (w/ 2 Curbs) & 6" Gravel Base - Auto 8" Concrete	182.00	ft	25
2411	Streets & Roads: 30' Wide (w/ 2 Curbs) & 6" Gravel Base - Truck 12" Concrete	294.00	ft	25
2420	Streets & Roads: 40' Wide (w/ 4 Curbs) & 6" Gravel Base - Auto 8" Concrete	249.00	ft	25
2421	Streets & Roads: 40' Wide (w/ 4 Curbs) & 6" Gravel Base - Truck 12" Concrete	399.00	ft	25
2430	Streets & Roads: 40' Wide (w/ 2 Curbs) & 6" Gravel Base - Auto 8" Concrete	239.00	ft	25
2431	Streets & Roads: 40' Wide (w/ 2 Curbs) & 6" Gravel Base - Truck 12" Concrete	389.00	ft	25
2432	Streets & Roads: 58' Wide (w/2 Curbs) & 6" Gravel Base- Auto 8" Concrete	233.00	ft	25
2440	Streets & Roads: 2 Lane Gravel	32.95	ft	25
Fencing				
2501	Fencing: Barbwire, 3 Strand	4.00	ft	10
2505	Fencing: 3' Chain Link	7.00	ft	20

Code	Description	Rate	Unit	Life
2508	Fencing: 9' Chain Link	18.00	ft	20
2510	Fencing: 6' Chain Link	10.00	ft	20
2511	Fencing: 8' Chain Link	12.00	ft	20
2512	Fencing: 16' Chain Link	40.00	ft	20
2513	Fencing: 24' Chain Link	45.00	ft	20
2514	Fencing: 12' Chain Link	24.00	ft	20
2515	Fencing: 20' Chain Link	38.00	ft	20
2516	Fencing: 10' Chain Link	11.00	ft	20
2520	Fencing: 6' Wood	18.50	ft	20
2521	Fencing: 8' Wood	26.70	ft	20
2550	Barrier Posts	30.00	ea	20
Poles				
2590	Flag Pole - 18'	250.00	ea	20
2600	Flag Pole - 30'	450.00	ea	20
Miscellaneous				
2601	Tennis Courts	4.32	sq ft	15
2603	Running Tracks	2.97	sq ft	15
2604	Retaining Wall	120.00	ft	30
2605	Bleachers, 100 Person Capacity	4,773.00	ea	30
2606	100' Communication Tower	35,000.00	ea	25
2650	Walk Tunnels	450.00	ft	60
2655	Johnstone Skywalk	1,650.00	ft	60
2660	CAS Skywalks	2,973.00	ft	60
2601	Tennis Courts	4.32	sq ft	15
Water Wells				
2703	Water Wells	8,760.00	ea	25
Irrigation				
2700	Irrigation Wells	8,462.00	ea	25
2704	Underground Sprinkler Systems	2.75	sq yd	15
2706	Water Wells - 25'	12.00	ft	25
2708	Irrigation Lines (PVC 4")	2.50	ln ft	25
Septic Systems				
2710	Septic Systems	1,875.00	ea	25
2715	Septic Tank (1,000 gal)	700.00	gal	25
2716	Septic Tank: (2,500 gal)	3,200.00	gal	25
Sewer				
2720	Sewer Lift Station - Small	5,000.00	ea	50
2721	Sewer Lift Station - Medium	20,000.00	ea	50
2722	Sewer Lift Station - Large	30,000.00	ea	50
Lagoon				
2730	Lagoon - 2 Cell	180,000	ea	50
2731	Lagoon - 3 Cell	225,000	ea	50
Hydrants				
2800	Hydrants - Fire	3,000.00	ea	40

Code	Description	Rate	Unit	Life
2803	Hydrants - Metal (10"x39")	200.00	ea	40
Ball				
2810	Basketball Goals	450.00	ea	10
2815	Softball Backstop	1,688.00	ea	30
Tanks				
2850	Tanks: Above Ground (300 gal)	900.00	ea	30
2851	Tanks: Above Ground (10,000 gal)	9,096.00	ea	30
2852	Tanks: Above Ground (500 gal)	1,735.00	ea	30
2853	Tanks: Above Ground (21,000 gal)	21,000.00	ea	30
2854	Tanks: Above Ground (1,000 gal)	2,775.00	ea	30
2855	Tanks: Underground (2,500 gal)	2900.00	ea	30
2856	Tanks: Propane (1,000 gal)	1,600.00	ea	30
2857	Tanks: Underground (10,000 gal)	10,000.00	ea	30
2858	Tanks: (6,350 gal)	7,550.00	ea	30
2859	Tanks: (19,100 gal)	20,000	ea	30
2860	Tanks: Propane (500 gal)	1,500.00	ea	30
2861	Tanks: Propane (250 gal)	750.00	ea	30
2862	Tanks: Propane (80 gal)	240.00	ea	30
Boating				
2900	Riprap Marina/BoatRamp	24,000.00	ea	50
2901	Breakwater	10,000.00	ea	50
2910	Boat Ramp: Cement	2,200.00	ea	25
Radar				
2950	Radar Pedestals	24,000.00	ea	25
2955	Radar Domes: 12" Fiberglass	10,000.00	ea	25
Bridges				
3000	Bridges: Wooden Foot	2,500.00	ea	25
3001	Bridges: Walking	2,500.00	ea	25
3005	Bridges: wood/metal	20,000.00	ea	25
3015	Bridges: Vehicle	420,000.00	ea	25
Manholes				
3200	Manholes	1158.00	ea	60
Transformers				
4000	Transformers – 10KVA	845.00	ea	30
4001	Transformers – 15KVA	930.00	ea	30
4003	Transformers – 25KVA	1,151.00	ea	30
4006	Transformers – 50KVA	1,335.00	ea	30
4009	Transformers – 150KVA	5,130.00	ea	30

The infrastructure cost list represents an effort to accurately assign replacement costs to infrastructure items throughout the state. These costs were arrived at using recent bid tabulations, information from several city engineers, estimates from consulting engineers, and costs from various state agencies. This list is not all-inclusive, but includes the majority of items that will be found on state properties.

The cost list is meant to assign a replacement value to infrastructure, and will be used for formula budgeting purposes. Actual costs of a replacement project will differ for each case; these numbers are for formula budgeting purposes only. The costs do not take into account variations in building code requirements. The following paragraphs describe each category, and provide information on how the numbers should be applied.

Parking Lots: Parking lot value is calculated on a per square foot basis, applying the appropriate unit cost for the material used. Catch basins and curb and gutter are separated out, since many lots have islands or other structures that need to be accounted for. The unit costs include site preparation on virgin soil, and do not take into account the removal or relocation of utilities, lights, or existing concrete and asphalt.

Storm Sewer: Storm sewer is calculated by the lineal foot. Catch basins and access holes are included in the per foot cost. Standard sizes are used on this list, as opposed to listing every possible size. For replacement cost purposes, if the size currently used doesn't appear on the list, use the next larger standard size. This was done to keep the list short, and assumes that a replacement would also increase capacity. Excavation is based on virgin soil, and does not include repairs to streets or relocating utilities.

Water Main and Feed Lines: Water lines are calculated on a per lineal foot basis, from the building foundation to the city connection. If the city owns the line from the main to the curb stop/shut-off, it should not be counted. Again, standard sizes were used; use the next larger size if currently used lines fall between the standard sizes. It is assumed that most replacement would be done with PVC piping. Excavation is based on virgin soil.

Sanitary Sewer: Sanitary sewers are calculated on a per lineal foot basis, with the access holes being included in the cost. Standard sizes were again used, with the assumption being made that replacement would be done with PVC. Excavation is based on virgin soil. Major structures such as lift stations and lagoon pump houses should be considered as buildings, with the pumps and controls being fixed equipment. Septic systems are considered to be building plumbing.

Electrical: This category deals with high voltage transmission lines, transformers and high voltage switch gear considered fixed equipment. Lines are calculated on a per lineal foot basis. Typical conduit installation consists of three 4" PVC conduits containing conductors, with the conduits being encased in concrete underground. Direct buried lines are simply trenched-in conductors. Excavation is based on virgin soil. Overhead lines should be considered at the conduit price, as the price is nearly the same, and most overhead replacements are going underground.

Steam Line, Direct Buried: Direct buried lines are encased in a conduit and are calculated on a per lineal foot basis. The cost is based on virgin soil and does not take into account the removal

of the existing line. Standard sizes were used as before, and the cost of access structures is included.

Condensate, Direct Buried: Same considerations as steam line.

Utility Tunnels: Tunnels are calculated on a per lineal foot basis, applying the unit cost for the appropriate size of tunnel. Tunnels may or may not contain steam and condensate lines, or other utilities. For steam tunnels, a standard 6" size was used for both lines, with uni-strut pipe support structure being used. The 6" pipe size represents an average, since there are combinations of sizes too numerous to list for this purpose. The access holes, expansion joints, and coffin boxes are included in the per foot cost.

Gas Mains: Gas mains are calculated on a per lineal foot basis, with unit costs for 2" and 3" high-pressure PVC, and 4" steel as the standard sizes. Excavation is based on virgin soil, and meters are not included in the cost.

Telecom: This category covers the lines outside of buildings, up to the building entrance terminal. The lines are categorized by function, with the first category being the backbone. The trunk lines are broken down based on whether they serve academic or housing buildings. Aerial cable and broadband coax are also separated. Any components inside of the buildings are not counted as infrastructure, and should be included in the building valuation. All costs are calculated on a per lineal foot basis, with access structures included in the cost.

Sidewalk: Sidewalks are calculated on a per square foot basis, depending on the concrete thickness. Patio block is categorized separately. Curb cuts for handicapped access are not included in the costs.

Lighting: This section deals with exterior site lighting, which is on a replacement basis to include the light fixtures. The 30' and 75' poles are standard, street or parking lot lighting. "On Building" refers to light fixtures on building exterior walls or roofs that are used for site or security lighting. Walkway lights are typically 10'-15' tall, and are installed along sidewalks. The Hi-Mast is an omni-directional light pole used to illuminate parking lots or other large areas. All costs are per pole or fixture.

Razor Wire: Standard concertina type security wire, calculated on a per foot basis.

Streets and Roads: Streets and roads are calculated on a per lineal foot basis, using the factor for the appropriate type of road. Standard types were used; use the type that would be used in replacing existing roadways. Costs include removal of old street, but do not include catch basins or access holes. Curb and gutter are also included, as is the re-connection with existing sidewalks (ramped).

Fencing: Calculate by the lineal foot for each type. Includes the fencing and the posts.

Miscellaneous Items:

Tennis courts: calculate by square footage.
Running tracks: calculate by square footage, includes track markings.
Retaining walls: calculate by the lineal foot.
Bleachers, per 100-person section: for fixed athletic seating outdoor,
Communication Tower: calculate per tower.
Walk tunnels, Johnston Skywalk, and CAS Skywalk: calculate by the foot.

Flag Poles, Water Wells, Septic Systems, Lagoons, Hydrants, Basketball/Softball items, Tanks, Boating, Radar items, Bridges, and Manholes: Calculate by each.

Irrigation:

Irrigation wells: calculate by each.
Underground sprinklers: calculate by square yardage of grounds served by the system.
Irrigation lines: calculate by lineal foot.